

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003875**Date Inspected:** 10-Aug-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei, Guo Yan Fei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower & OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

**OBG Bay 1:**

The QA Inspector randomly observed ZPMC welder Yang Yangzeng ID Number 059418, utilizing the Flux Cored Arc Welding (FCAW) Process in the 3F (Vertical Fillet) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2133 to weld 8 millimeter (mm) diaphragms into various U-Ribs for Deck Plate Sub-Assembly DP471-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 219 amps, 27.5 volts on Weld Joint (WJ) DP471-001-052. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC Non-Destructive Testing (NDT) Technician Bo Tin Rui, utilizing the Magnetic Particle Testing (MT) Method to examine the tack welds attaching the 4 U-Ribs to Deck Plate 8BW-DP120-001 at WJ's 001/002 (U-74), 003/004 (U-68), 005/006 (U-57) and 007/008 (U-64). Mr. Bo marked 28 indications and recorded 10 of those 20 indications as cracks. All 20 areas were marked up directly on the steel by Mr. Bo to be repaired.

**New Tower Shop Bay 1:**

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The QA Inspector randomly observed ZPMC 8 helpers utilizing angle grinders to blend the tack welds attaching longitudinal stiffeners to Tower Skin Plate E(S) Sub-Assembly SSD1-SA173. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welders Su Yonghui ID Number 053680 and Wang Yubi ID Number 056144, utilizing the Shielded Metal Arc Welding (SMAW) Process in the 2G Position (Horizontal Groove) Position with ZPMC WPS WPS-B-P-2312-TC-U5b (CJP) and WPS-B-P-2312-TC-P5 (PJP) to tack weld during fit up, longitudinal stiffeners to Tower Skin Plate E(S) Sub-Assembly SSD1-SA173. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Guo Yan Fei monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Zhang Wei Long ID Number 040431, utilizing the SMAW Process with ZPMC WPS WPS-B-P-2211-B-U3b in the 1G (Flat Groove) Position to weld run/on and run/off tabs to the start and stop ends of the butt splice on Tower Skin Plate D(S) longitudinal stiffener, at WJ SSD1-SA40A/E-6A. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

New Tower Shop Bay 2:

The QA Inspector randomly observed ZPMC welders utilizing the SMAW Process with ZPMC WPS WPS-B-P-2214-TC-U5b in the 4G(4F) (Overhead Groove/Overhead Fillet) Position and the FCAW Process with WPS WPS-B-T-2232-TC-F in the 2G(2F) Position, to weld lifting lugs on to Tower Skin Plate E(E) Sub-Assembly ESD1-SA216.

The QA Inspector randomly observed that CJP WJ ESD1-SA107-20B of Tower Skin Plate E(E) Sub-Assembly SSD1-SA107, did not have the root pass welded prior to flipping to A side for back gouging per approved ZPMC Procedure Sheet RP-03 - Welding the CJP Joint of Longitudinal Stiffeners. The QA Inspector generated an Incident Report for this item for 08-10-08.

New Tower Shop Bay 3:

The QA Inspector randomly observed 3 ZPMC helpers utilizing angle grinders to blend and grind the welds attaching the U-Ribs to Deck Plate DP352-001 Yellow Tag Number 000343, prior to weld repairs.

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## Summary of Conversations:

As noted in the above body of this report.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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**Inspected By:** Franco,Charlie

Quality Assurance Inspector

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**Reviewed By:** Carreon,Albert

QA Reviewer